



Project Summary

Users Guide for the Conversion of Navy Paint Spray Booth Particulate Emission Control Systems from Wet to Dry Operation

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The use of water curtains for air pollution control of paint spray booths is considered a major source of water and solid waste pollution from industrial painting operations. It is possible, however, to eliminate this water pollution problem and significantly reduce the solid waste load by converting the booth to utilize a dry filter pollution control system. The conversion, however, will require extensive planning prior to actual facility modification. The users guide presents the requirements to facilitate the planning and preparation for conversion of typical spray booths. Although the manual addresses modifications of Navy facility spray booths, the basic engineering requirements discussed apply also to other Department of Defense installations and to commercial industrial facilities.

This Project Summary was developed by EPA's Air and Energy Engineering Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Background

The U.S. Navy (USN) and the EPA have been exploring methods to reduce the quantity of hazardous waste generated from Navy and industrial painting facilities. One target of these efforts has been the paint spray booth. The most common of these booths use a water curtain to remove particulate overspray from the emission stream from the booths.

The large volume of contaminated waste water and solid waste generated as a result of air pollution control contains hazardous paint particles, solvents, and flocculating and coagulating agents. The water must be treated and the hazardous constituents removed before it can be discharged to municipal treatment facilities. The resulting sludge also must be treated as a hazardous material and disposed of in an environmentally safe manner. One option to reduce these problems associated with spray booths is the conversion of the booth to use dry filtration for pollution control. The conversion of paint booths to dry operation has a number of significant benefits:

- potentially lower disposal costs,
- potentially lower energy costs,

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- less system deterioration due to rusting,
 - greater reliability and maintainability, and
 - improved worker environment.

Users Guide Organization

The guide classifies and characterizes Navy and similar commercial paint booths. It also provides a conversion

strategy and a construction work package of the two dry booth types for conversion of a typical wet booth. Step-by-step conversion instructions and guidelines are presented. The permitting process waste disposal issues are presented and discussed. Finally, data are presented so that a user may develop a cost/benefit analysis for a proposed conversion for virtually any booth.

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The complete report, entitled "Users Guide for the Conversion of Navy Paint Spray Booth Particulate Emission Control Systems from Wet to Dry Operation" (Order No. PB 90-188 772/AS; Cost: \$17.00, subject to change) will be available only from:

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Telephone: 703-487-4650*

The EPA Project Officer can be contacted at:

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